

Untitled.ST25  
SEQUENCE LISTING

<110> Li, Yeuhua  
Martin, Linda D.  
Kenneth, Adler B.

<120> METHODS AND COMPOSITIONS FOR MUCUS SECRETION

<130> 5051-451IP

<140> PCT/US 00/05050

<141> 2000-02-24

<150> US 09/256,154

<151> 1999-02-24

<160> 6

<170> PatentIn version 3.1

<210> 1

<211> 24

<212> PRT

<213> Homo Sapiens

<400> 1

Gly Ala Gln Phe Ser Lys Thr Ala Ala Lys Gly Glu Ala Ala Ala Glu  
1 5 10 15

Arg Pro Gly Glu Ala Ala val Ala  
20

<210> 2

<211> 25

Untitled.ST25

<212> PRT

<213> Homo Sapiens

<400> 2

Lys Lys Lys Lys Lys Arg Phe Ser Phe Lys Lys Ser Phe Lys Leu Ser  
1 5 10 15

Gly Phe Ser Phe Lys Lys Asn Lys Lys  
20 25

<210> 3

<211> 1885

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (309)..(1307)

<223>

<400> 3

tttattactt cttttttttt cgaactacac ttgggctcct ttttttgtgc tcgacttttc	60
cacccttttt cctccctcc tgtgctgctg ctttttgatc tcttcgacta aaattttttt	120
atccggagtg tatttaatcg gtctgtttct gtcctctcca ccacccccac cccctccct	180
ccgggtgtgtg tgccgctgcc gctgttgccg ccgccgctgc tgctgctgct cgccccgctg	240
ttacaccaac ccgaggctct ttgtttcccc tcttgatct gttgagtttc tttgttgaag	300
aagccagc atg ggt gcc cag ttc tcc aag acc gca gcg aag gga gaa gcc	350
Met Gly Ala Gln Phe Ser Lys Thr Ala Ala Lys Gly Glu Ala	
1 5 10	
gcc gcg gag agg cct ggg gag gcg gct gtg gcc tcg tcg cct tcc aaa	398
Ala Ala Glu Arg Pro Gly Glu Ala Ala Val Ala Ser Ser Pro Ser Lys	
15 20 25 30	
gcg aac gga cag gag aat ggc cac gtg aag gta aac ggc gac gct tcg	446
Ala Asn Gly Gln Glu Asn Gly His Val Lys Val Asn Gly Asp Ala Ser	
35 40 45	
ccc gcg gcc gcc gag tcg ggc gcc aag gag gag ctg cag gcc aac ggc	494
Pro Ala Ala Ala Glu Ser Gly Ala Lys Glu Glu Leu Gln Ala Asn Gly	
50 55 60	

Untitled.ST25

agc gcc ccg gcc gcc gac aag gag gag ccc gcg gcc gcc ggg agc ggg Ser Ala Pro Ala Ala Asp Lys Glu Glu Pro Ala Ala Ala Gly Ser Gly 65 70 75	542
gcg gcg tcg ccc tcc gcg gcc gag aaa ggt gag ccg gcc gcc gcc gct Ala Ala Ser Pro Ser Ala Ala Glu Lys Gly Glu Pro Ala Ala Ala Ala 80 85 90	590
gcc ccc gag gcc ggg gcc agc ccg gta gag aag gag gcc ccc gcg gaa Ala Pro Glu Ala Gly Ala Ser Pro Val Glu Lys Glu Ala Pro Ala Glu 95 100 105 110	638
ggc gag gct gcc gag ccc ggc tcg ccc acg gcc gcg gag gga gag gcc Gly Glu Ala Ala Glu Pro Gly Ser Pro Thr Ala Ala Glu Gly Glu Ala 115 120 125	686
gcg tcg gcc gcc tcc tcg act tct tcg ccc aag gcc gag gac ggg gcc Ala Ser Ala Ala Ser Ser Thr Ser Ser Pro Lys Ala Glu Asp Gly Ala 130 135 140	734
acg ccc tcg ccc agc aac gag acc ccg aaa aaa aaa aag aag cgc ttt Thr Pro Ser Pro Ser Asn Glu Thr Pro Lys Lys Lys Lys Lys Arg Phe 145 150 155	782
tcc ttc aag aag tct ttc aag ctg agc ggc ttc tcc ttc aag aag aac Ser Phe Lys Lys Ser Phe Lys Leu Ser Gly Phe Ser Phe Lys Lys Asn 160 165 170	830
aag aag gag gct gga gaa ggc ggt gag gct gag gcg ccc gct gcc gaa Lys Lys Glu Ala Gly Glu Gly Gly Glu Ala Glu Ala Pro Ala Ala Glu 175 180 185 190	878
ggc gcc aag gac gag gcc gcc ggg ggc gca gct gcg gcc gcc gcc gag Gly Gly Lys Asp Glu Ala Ala Gly Gly Ala Ala Ala Ala Ala Glu 195 200 205	926
gcg ggc gcg gcc tcc ggg gag cag gca gcg gcg ccg ggc gag gag gca Ala Gly Ala Ala Ser Gly Glu Gln Ala Ala Ala Pro Gly Glu Glu Ala 210 215 220	974
gca gcg ggc gag gag ggg gcg gcg ggt ggc gac tcg cag gag gcc aag Ala Ala Gly Glu Glu Gly Ala Ala Gly Gly Asp Ser Gln Glu Ala Lys 225 230 235	1022
ccc cag gag gcc gct gtc gcg cca gag aag ccg ccc gcc agc gac gag Pro Gln Glu Ala Ala Val Ala Pro Glu Lys Pro Ala Ser Asp Glu 240 245 250	1070
acc aag gcc gcc gag gag ccc agc aag gtg gag gag aaa aag gcc gag Thr Lys Ala Ala Glu Glu Pro Ser Lys Val Glu Glu Lys Lys Ala Glu 255 260 265 270	1118
gag gcc ggg gcc agc gcc gcc gcc tgc gag gcc ccc tcc gcc gcc ggg Glu Ala Gly Ala Ser Ala Ala Ala Cys Glu Ala Pro Ser Ala Ala Gly 275 280 285	1166
ctg gtg tgc ccc cgg aga gga ggc agc ccc cgc gga gga gcc cgc gcc Leu Val Cys Pro Arg Arg Gly Gly Ser Pro Arg Gly Gly Ala Arg Gly 290 295 300	1214
cgc cgc agc ctc aat caa gcc tgc gca gcc ccc tca caa gag gcc cag Arg Arg Ser Leu Asn Gln Ala Cys Ala Ala Pro Ser Gln Glu Ala Gln 305 310 315 320	1262

Untitled.ST25

305	310	315	
ccc gag tgc agt cca gaa gcc ccc cca gcg gag gcg gca gag taa			1307
Pro Glu Cys Ser Pro Glu Ala Pro Pro Ala Glu Ala Ala Glu			
320	325	330	
aagagcaagc ttttgtaga taatcgaaga acattttctc ccccgtttgt ttggttgag			1367
tggtgccagg tactggattt tggagaactt gtctacaacc agggattgat tttaaagatg			1427
tcttttttta ttttactttt ttttaagcac caaattttgt tgtttttttt ttctccctc			1487
cccacagatc ccattctcaa tcattctggt aaccaccatt ccaacaggtc gaggagagct			1547
taaacacctt cttcctctgg ccttgtttct cttttatttt ttattttttc gcatcagtat			1607
taatgttttt gcatactttg catctttatt caaaagtgt aactttcttt gtcaatctat			1667
agacatgccc atatatgaag gagatgggtg ggtcaaaaag ggatatcaaa tgaagtgata			1727
gggggtcaca tggggaaatt gaagtgggtg ataacattgc caaaatagtg tgccactaga			1787
aatgggtgtaa aggcgtgtct tttttttttt tttaaagaaa agttattacc atgtattttg			1847
tgaggcaggt ttacaacact acaactcgtg ccgaattc			1885

<210> 4

<211> 332

<212> PRT

<213> Homo Sapiens

<400> 4

Met Gly Ala Gln Phe Ser Lys Thr Ala Ala Lys Gly Glu Ala Ala Ala	
1 5 10 15	
Glu Arg Pro Gly Glu Ala Ala Val Ala Ser Ser Pro Ser Lys Ala Asn	
20 25 30	
Gly Gln Glu Asn Gly His Val Lys Val Asn Gly Asp Ala Ser Pro Ala	
35 40 45	
Ala Ala Glu Ser Gly Ala Lys Glu Glu Leu Gln Ala Asn Gly Ser Ala	
50 55 60	
Pro Ala Ala Asp Lys Glu Glu Pro Ala Ala Ala Gly Ser Gly Ala Ala	
65 70 75 80	
Ser Pro Ser Ala Ala Glu Lys Gly Glu Pro Ala Ala Ala Ala Ala Pro	
85 90 95	

Untitled.ST25

Glu Ala Gly Ala Ser Pro Val Glu Lys Glu Ala Pro Ala Glu Gly Glu  
100 105 110

Ala Ala Glu Pro Gly Ser Pro Thr Ala Ala Glu Gly Glu Ala Ala Ser  
115 120 125

Ala Ala Ser Ser Thr Ser Ser Pro Lys Ala Glu Asp Gly Ala Thr Pro  
130 135 140

Ser Pro Ser Asn Glu Thr Pro Lys Lys Lys Lys Lys Arg Phe Ser Phe  
145 150 155 160

Lys Lys Ser Phe Lys Leu Ser Gly Phe Ser Phe Lys Lys Asn Lys Lys  
165 170 175

Glu Ala Gly Glu Gly Gly Glu Ala Glu Ala Pro Ala Ala Glu Gly Gly  
180 185 190

Lys Asp Glu Ala Ala Gly Gly Ala Ala Ala Ala Ala Glu Ala Gly  
195 200 205

Ala Ala Ser Gly Glu Gln Ala Ala Ala Pro Gly Glu Glu Ala Ala Ala  
210 215 220

Gly Glu Glu Gly Ala Ala Gly Gly Asp Ser Gln Glu Ala Lys Pro Gln  
225 230 235 240

Glu Ala Ala Val Ala Pro Glu Lys Pro Pro Ala Ser Asp Glu Thr Lys  
245 250 255

Ala Ala Glu Glu Pro Ser Lys Val Glu Glu Lys Lys Ala Glu Glu Ala  
260 265 270

Gly Ala Ser Ala Ala Ala Cys Glu Ala Pro Ser Ala Ala Gly Leu Val  
275 280 285

Cys Pro Arg Arg Gly Gly Ser Pro Arg Gly Gly Ala Arg Gly Arg Arg  
290 295 300

Ser Leu Asn Gln Ala Cys Ala Ala Pro Ser Gln Glu Ala Gln Pro Glu  
305 310 315 320

Cys Ser Pro Glu Ala Pro Pro Ala Glu Ala Ala Glu  
325 330

<210> 5

<211> 2589

Untitled.ST25

<212> DNA

<213> Homo Sapiens

<220>

<221> CDS

<222> (370)..(1368)

<223>

<400> 5

caaccagggga gattttctcca ttttctcttt gtctacagtg cggtacaaa tctgggattt 60

ttttattact tctttttttt tcgaactaca cttgggctcc tttttttgtg ctcgactttt 120

ccaccctttt tccctccctc ctgtgctgct gctttttgat ctcttcgact aaaatttttt 180

tatccggagt gtatttaatc ggttctgttc tgtctctctc accaccccca ccccccctcc 240

tccggtgtgt gtgccgctgc cgctgttgcc gccgccgctg ctgctgctgc tcgccccgtc 300

gttacaccaa cccgaggctc tttgtttccc ctcttggaac tgttgagttt ctttgttgaa 360

gaagccagc atg ggt gcc cag ttc tcc aag acc gca gcg aag gga gaa gcc 411  
Met Gly Ala Gln Phe Ser Lys Thr Ala Ala Lys Gly Glu Ala  
1 5 10

gcc gcg gag agg cct ggg gag gcg gct gtg gcc tcg tcg cct tcc aaa 459  
Ala Ala Glu Arg Pro Gly Glu Ala Ala Val Ala Ser Ser Pro Ser Lys  
15 20 25 30

gcg aac gga cag gag aat ggc cac gtg aag gta aac ggc gac gct tcg 507  
Ala Asn Gly Gln Glu Asn Gly His Val Lys Val Asn Gly Asp Ala Ser  
35 40 45

ccc gcg gcc gcc gag tcg ggc gcc aag gag gag ctg cag gcc aac ggc 555  
Pro Ala Ala Ala Glu Ser Gly Ala Lys Glu Glu Leu Gln Ala Asn Gly  
50 55 60

agc gcc ccg gcc gcc gac aag gag gag ccc gcg gcc gcc ggg agc ggc 603  
Ser Ala Pro Ala Ala Asp Lys Glu Glu Pro Ala Ala Ala Gly Ser Gly  
65 70 75

gcg gcg tcg ccc tcc tcg gcc gag aaa ggt gag ccg gcc gcc gcc gct 651  
Ala Ala Ser Pro Ser Ser Ala Glu Lys Gly Glu Pro Ala Ala Ala Ala  
80 85 90

gcc ccc gag gcc ggg gcc agc ccg gta gag aag gag gcc ccc gcg gaa 699  
Ala Pro Glu Ala Gly Ala Ser Pro Val Glu Lys Glu Ala Pro Ala Glu  
95 100 105 110

ggc gag act gcc gag ccc ggc tcg gcc acg gcc gcg gag gga gag gcc 747  
Gly Glu Ala Ala Glu Pro Gly Ser Ala Thr Ala Ala Glu Gly Glu Ala  
115 120 125

gca tcg gcc gcc tcc tcg act tct tcg ccc aag gcc gag gac ggc gcc 795

Untitled.ST25

Ala	Ser	Ala	Ala	Ser	Ser	Thr	Ser	Ser	Pro	Lys	Ala	Glu	Asp	Gly	Ala		
			130					135					140				
acg	ccc	tcg	ccc	agc	aac	gag	acc	ccg	aaa	aaa	aaa	aag	aag	cgc	ttt	843	
Thr	Pro	Ser	Pro	Ser	Asn	Glu	Thr	Pro	Lys	Lys	Lys	Lys	Lys	Arg	Phe		
		145					150					155					
tcc	ttc	aag	aag	tct	ttc	aag	ctg	agc	ggc	ttc	tcc	ttc	aag	aag	aac	891	
Ser	Phe	Lys	Lys	Ser	Phe	Lys	Leu	Ser	Gly	Phe	Ser	Phe	Lys	Lys	Asn		
		160				165					170						
aag	aag	gag	gct	gga	gaa	ggc	ggt	gag	gct	gag	gcg	ccc	gct	gcc	gaa	939	
Lys	Lys	Glu	Ala	Gly	Glu	Gly	Gly	Glu	Ala	Glu	Ala	Pro	Ala	Ala	Glu		
		175			180					185					190		
ggc	ggc	aag	gac	gag	gcc	gcc	ggg	ggc	gca	gct	gcg	gcc	gcc	gcc	gag	987	
Gly	Gly	Lys	Asp	Glu	Ala	Ala	Gly	Gly	Ala	Ala	Ala	Ala	Ala	Ala	Glu		
			195						200					205			
gcg	ggc	gcg	gcc	tcc	ggg	gag	cag	gca	gcg	gcg	ccg	ggc	gag	gag	gcg	1035	
Ala	Gly	Ala	Ala	Ser	Gly	Glu	Gln	Ala	Ala	Ala	Pro	Gly	Glu	Glu	Ala		
			210					215					220				
gca	gcg	ggc	gag	gag	ggg	gcg	gcg	ggt	ggc	gac	ccg	cag	gag	gcc	aag	1083	
Ala	Ala	Gly	Glu	Glu	Gly	Ala	Ala	Gly	Gly	Asp	Pro	Gln	Glu	Ala	Lys		
		225					230				235						
ccc	cag	gag	gcc	gct	gtc	gcg	cca	gag	aag	ccg	ccc	gcc	agc	gac	gag	1131	
Pro	Gln	Glu	Ala	Ala	Val	Ala	Pro	Glu	Lys	Pro	Pro	Ala	Ser	Asp	Glu		
		240				245					250						
acc	aag	gcc	gcc	gag	gag	ccc	agc	aag	gtg	gag	gag	aaa	aag	gcc	gag	1179	
Thr	Lys	Ala	Ala	Glu	Glu	Pro	Ser	Lys	Val	Glu	Glu	Lys	Lys	Ala	Glu		
		255			260				265						270		
gag	gcc	ggg	gcc	agc	gcc	gcc	gcc	tgc	gag	gcc	ccc	tcc	gcc	gcc	ggg	1227	
Glu	Ala	Gly	Ala	Ser	Ala	Ala	Ala	Cys	Glu	Ala	Pro	Ser	Ala	Ala	Gly		
			275					280						285			
ccc	ggc	gcg	ccc	ccg	gag	cag	gag	gca	gcc	ccc	gcg	gag	gag	ccc	gcg	1275	
Pro	Gly	Ala	Pro	Pro	Glu	Gln	Glu	Ala	Ala	Pro	Ala	Glu	Glu	Pro	Ala		
			290					295					300				
gcc	gcc	gca	gcc	tcg	tca	gcc	tgc	gca	gcc	ccc	tca	cag	gag	gcc	cag	1323	
Ala	Ala	Ala	Ala	Ser	Ser	Ala	Cys	Ala	Ala	Pro	Ser	Gln	Glu	Ala	Gln		
		305					310					315					
ccc	gag	tgc	agt	cca	gaa	gcc	ccc	cca	gcg	gag	gcg	gca	gag	taa		1368	
Pro	Glu	Cys	Ser	Pro	Glu	Ala	Pro	Pro	Ala	Glu	Ala	Ala	Glu				
		320				325					330						
aagagcaagc	ttttgtgaga	taatcgaaga	acttttctcc	cccgtttggt	tggtggagtg											1428	
gtgccaggta	ctgttttgga	gaacttgct	acaaccaggg	attgatttta	aagatgtctt											1488	
tttttat	actttttttt	aagcaccaaa	ttttgttggt	tttttttttc	tccccctccc											1548	
acagatccca	tctcaaatca	ttctgttaac	caccattcca	acaggctcag	gagagcttaa											1608	
acaccttctt	cctctgcctt	gtttctcttt	tattttttat	tttttcgcat	cagtattaat											1668	
gtttttgc	actttgc	ttttttcaaa	agtgtaaa	ttttttgtca	atctatggac											1728	

Untitled.ST25

```

atgcccatat atgaaggaga tgggtgggtc aaaaagggat atcaaatgaa gtgatagggg 1788
tcacaatggg gaaattgaag tgggtgcataa cattgccaaa atagtgtgcc actagaaatg 1848
gtgtaaaaggc tgtctttttt ttttttttta aagaaaagtt attaccatgt attttgtgag 1908
gcagggtttac aacactacaa gtcttgagtt aagaaggaaa gagggaaaaaa gaaaaaacac 1968
caatacccag atttaaaaaa aaaaaaacga tcatagtctt aggagtcat ttaaaccata 2028
ggaacttttc acttatctca tgtagctgt accagtcagt gattaagtag aactacaagt 2088
tgtataggct ttattgttta ttgctgggtt atgaccttaa taaagtgtaa ttatgtatta 2148
ccagcagggt gtttttaact gtgactattg tataaaaaca aatcttgata tccagaagca 2208
catgaagttt gcaactttcc accctgcccc tttttgtaaa actgcagtca tcttgacact 2268
tttaaaacac aaatttttaa ctcaaccaag ctgtgataag tggaatgggt actgtttata 2328
ctgtgggtatg tttttgatta cagcagataa tgctttcttt tccagtcgtc tttgagaata 2388
aagggaaaaa aatcttcaga tgcaatgggt ttgtgtagca tcttgtctat catgttttgt 2448
aaatactgga gaagctttga ccaatttgac ttagagatgg aatgtaactt tgcttacaaa 2508
aattgctatt aaactcctgc ttaagggtgt ctaattttct gtgagcacac taaaagcgaa 2568
aaataaatgt gaataaaatg t 2589

```

<210> 6

<211> 332

<212> PRT

<213> Homo Sapiens

<400> 6

```

Met Gly Ala Gln Phe Ser Lys Thr Ala Ala Lys Gly Glu Ala Ala Ala
1           5           10           15

```

```

Glu Arg Pro Gly Glu Ala Ala Val Ala Ser Ser Pro Ser Lys Ala Asn
20           25           30

```

```

Gly Gln Glu Asn Gly His Val Lys Val Asn Gly Asp Ala Ser Pro Ala
35           40           45

```

```

Ala Ala Glu Ser Gly Ala Lys Glu Glu Leu Gln Ala Asn Gly Ser Ala
50           55           60

```

```

Pro Ala Ala Asp Lys Glu Glu Pro Ala Ala Ala Gly Ser Gly Ala Ala
65           70           75           80

```



Untitled.ST25

Ser Pro Ser Ser Ala Glu Lys Gly Glu Pro Ala Ala Ala Ala Ala Pro  
85 90 95

Glu Ala Gly Ala Ser Pro Val Glu Lys Glu Ala Pro Ala Glu Gly Glu  
100 105 110

Ala Ala Glu Pro Gly Ser Ala Thr Ala Ala Glu Gly Glu Ala Ala Ser  
115 120 125

Ala Ala Ser Ser Thr Ser Ser Pro Lys Ala Glu Asp Gly Ala Thr Pro  
130 135 140

Ser Pro Ser Asn Glu Thr Pro Lys Lys Lys Lys Lys Arg Phe Ser Phe  
145 150 155 160

Lys Lys Ser Phe Lys Leu Ser Gly Phe Ser Phe Lys Lys Asn Lys Lys  
165 170 175

Glu Ala Gly Glu Gly Gly Glu Ala Glu Ala Pro Ala Ala Glu Gly Gly  
180 185 190

Lys Asp Glu Ala Ala Gly Gly Ala Ala Ala Ala Ala Ala Glu Ala Gly  
195 200 205

Ala Ala Ser Gly Glu Gln Ala Ala Ala Pro Gly Glu Glu Ala Ala Ala  
210 215 220

Gly Glu Glu Gly Ala Ala Gly Gly Asp Pro Gln Glu Ala Lys Pro Gln  
225 230 235 240

Glu Ala Ala Val Ala Pro Glu Lys Pro Pro Ala Ser Asp Glu Thr Lys  
245 250 255

Ala Ala Glu Glu Pro Ser Lys Val Glu Glu Lys Lys Ala Glu Glu Ala  
260 265 270

Gly Ala Ser Ala Ala Ala Cys Glu Ala Pro Ser Ala Ala Gly Pro Gly  
275 280 285

Ala Pro Pro Glu Gln Glu Ala Ala Pro Ala Glu Glu Pro Ala Ala Ala  
290 295 300

Ala Ala Ser Ser Ala Cys Ala Ala Pro Ser Gln Glu Ala Gln Pro Glu  
305 310 315 320

Cys Ser Pro Glu Ala Pro Pro Ala Glu Ala Ala Glu  
325 330

Untitled.ST25